

ABSTRACT OF THE DISCLOSURE

A phased array antenna system having a corporate waveguide distribution network stripline printed circuit board. The stripline printed circuit board receives electromagnetic (EM) wave energy from a 1X4 waveguide distribution network input plate and distributes the EM wave energy to 524 radiating elements. The stripline circuit board enables extremely tight spacing of independent antenna radiating elements that would not be possible with a rectangular air filled waveguide. The antenna system enables operation at millimeter wave frequencies, and particularly at 44 GHz, and without requiring the use of a plurality of look-up tables for various phase and amplitude delays, that would otherwise be required with a rectangular, air-filled waveguide distribution structure. The antenna system can be used at millimeter wave frequencies, and in connection with the MILSTAR communications protocol, without the requirement of knowing, in advance, the next beam hopping frequency employed by the MILSTAR protocol.